

1 WHAT IS CLAIMED IS:

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1. An exchange setting a transmission path
for transmitting communication information through a
switch network comprising a plurality of switches,
said switch network provided with a plurality of
10 inputs and a plurality of outputs so that the
transmission path is formed between one of the inputs
and one of the outputs by routing the switches in said
switch network, said exchange changing a route of the
transmission path when a malfunction occurs in one of
15 the switches included in the transmission path so as
to bypass the malfunctioning switch, said exchange
comprising:

a malfunctioning switch detecting unit
detecting a location of the malfunctioning switch in
20 said switch network; and

changing means for changing the route of the
transmission path by switching one of the inputs and
outputs connected to the transmission path based on
predetermined routing information so as to bypass the
25 malfunctioning switch.

30 2. The exchange as claimed in claim 1,
wherein said changing means comprises:

a storing unit which stores table
information indicating a plurality of routes each of
which bypasses one of the switches in said switch
35 network, each of the routes being indicated in
relation to one of the inputs and outputs of the
switch network; and

1 a selecting unit selecting one of the routes
indicated in said table information so as to change
the route of the transmission path to bypass the
malfunctioning switch.

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3. The exchange as claimed in claim 2,
10 wherein said changing means further comprises:
an input switching unit switching the input
of said switch network;
an output switching means switching the
output of said switch network; and
15 input and output selecting means for
selecting one of said input switching unit and said
output switching unit so that said changing means
changes the route of the transmission path by the
selected one of said input switching unit and said
20 output switching unit.

25 4. The exchange as claimed in claim 3,
wherein said input and output selecting means selects
said input switching unit when the malfunctioning
switch is one of the switches directly connected to
said input switching unit.

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5. The exchange as claimed in claim 3,
wherein said input and output selecting means selects
35 said output switching unit when the malfunctioning
switch is one of the switches directly connected to
said output switching unit.

1 6. The exchange as claimed in claim 3,
 wherein said input and output selecting means selects
 said input switching unit when the malfunctioning
 switch is one of the switches other than the switches
5 directly connected to one of said input switching unit
 and said output switching unit.

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 7. The exchange as claimed in claim 3,
 wherein said input and output selecting means selects
 said output switching unit when the malfunctioning
 switch is one of the switches other than the switches
15 directly connected to one of said input switching unit
 and said output switching unit.

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